Work Order ID 69967

Wednesday, May 25, 2011 9:03:09 AM

Item ID: D206-667-207BL **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Crosstube Mid Aft

Start Date: 5/25/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 6/24/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** M **Date:** 11-05-25 **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
IIN-D206-667	D								
100	DOCUMENT CONTROL	0.00							
DC	**Memo**	0.00							
Document Control	Photocopy bluefile and create labels as per PPP D206-667-207								
110	BENDING MACHINE - CROSSTUBES	0.00							
CNC Bend 2	**Memo**	0.00							
CNC Alpha 160 Bender	Bend tube as per Dwg D206-667-247 using CNC bender program D206-667-207								
120	QC15- Crosstube Dimensional Check	0.00							
QC	**Memo**	0.00							
Quality Control									

for CL 11-6-30

CHG 002 11/06/30

11-6-21

11/06/21

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

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Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Crosstubes	0.00							
Crosstubes		0.00							
Crosstubes	**Memo**								

1-Drill pilot holes in tube using drill Jig DT & DT and drill table DT8577 and tower holes #6 as per QSI0010 and as per Dwg D206-667-247. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT & DT as per Dwg D206-667-247 Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT & DT as per Dwg D206-667-247. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT & DT as per Dwg D206-667-247

6-Drill Fwd rivet holes using drill Jig DT as per Dwg D206-667-147.Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT as per Dwg D206-667-247.

8-C'sink holes as per Dwg D206-667-247.

9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-247 Inside of Cuff(Donot engrave on outside of tube)

10 -Deburr & Inspect for surface damage. Repair damage within limits as per

JW 11-06-21
TD

SAD 11-06-22

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	Dwg D206-667-247								
140 HandFXtube	Crosstubes Chemical Conversion	0.00	SAD 11-06-23			(1)			
Hand Finishing Crosstubes	**Memo**	0.00							
150 QC	QC3- Inspect Part Finish	0.00	6/6/24						
Quality Control	**Memo**	0.00							
160 QC	QC5- Inspect part completeness to step on W/O	0.00							
Quality Control	**Memo**	0.00	6/6/24						

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

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Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Outsource process - NDT per QSI038 4.1	0.00				CL 11/06/27		(1)	
Outsource2	**Memo**	0.00							
Outsource process - NDT	Liquid Penetrant Inspection as per QSI 038Or Issue P/O: 14376 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order								
180	Packaging	0.00				CL 11/06/28		(1)	
Packaging	**Memo**	0.00							
Packaging	Ensure copy of NDT results attached to work order.								
190	QC5- Inspect part completeness to step on W/O	0.00				RT 11-06-27			
QC	**Memo**	0.00							
Quality Control	Ensure results are as per Dwg D206-667-247								

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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NOTE: Date & initial all entries

Work Order ID 69967

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Item ID: D206-667-207BL **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Crosstube Mid Aft

Start Date: 5/25/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 6/24/2011 **Req'd Qty:** 1.00 **Customer:**

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Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	SprayPaint	0.00				W	11	06	27 (T)
SprayPaint	**Memo**	0.00							
Spray Painting	1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2 PRIME: Start Time: 9:00 Fininsh Time: 10:00 PAINT: Start Time: 2:00 Finish Time: 3:30								
210	QC14- Inspect Spray Paint	0.00				JT	11	-06	-28
QC	**Memo**	0.00							
Quality Control	Wrap in plastic bag to protect from scratches								

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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NOTE: Date & initial all entries

Item ID: D206-667-207BL **Accept** **Setup Start** **Stop**
Revision ID:
Item Name: Crosstube Mid Aft
Start Date: 5/25/2011 **Start Qty:** 1.00 **Cust Item ID:**
Required Date: 6/24/2011 **Req'd Qty:** 1.00 **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** **Stop**
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		0.00							
Crosstubes	Crosstubes					RS	11	06	30
Crosstubes	**Memo**	0.00							
Crosstubes	1-Install nut plates as per Dwg D206-667-247.								
230		0.00							
Crosstubes	Skidtubes					RS	11	06	29
Crosstubes	**Memo**	0.00							
Crosstubes	1-Install support using 0.03" to 0.06" thick layer of ~~magnobond 6398~~ per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (3) top holes should be facing up.					USE PROSEAL PTO			
	A/R ~~Magnobond 6398~~ PROSEAL 117510								
	2-Install supports and clamps as per Dwg D206-667-247. Torque clamps to 80-100 in lb								

Dart Aerospace Ltd

W/O: 69967	WORK ORDER CHANGES						
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector
11.06.21	230	INSTALL SUPPORT USING PROSEAL PER ATTACHED PROCEDURE	ZT	11-06-29	1	11.06.21 DS1642	11-06-30

Part No: D206-667-207BL **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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NOTE: Date & initial all entries

Work Order ID 69967

Wednesday, May 25, 2011 9:03:09 AM

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Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							
QC	**Memo**	0.00					11	06	30 (1)
Quality Control									
250	Pick Kit	0.00							
Packaging	**Memo**	0.00					6/30		(C)
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
QC	**Memo**	0.00				(C)			
Quality Control									

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W/O:		WORK ORDER CHANGES					
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Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270	Packaging	0.00							
Packaging									
Packaging	**Memo**	0.00							
Packaging	Identify and pack for shipping as per PPP D206-667-207 Location: _____ PPP Rev: D Rev A								
280	QC21- Final Inspection - Work Order Release	0.00							
QC									
Quality Control	**Memo**	0.00							

11/6/30

11-04-30

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

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NOTE: Date & initial all entries

Picklist Print

Wednesday, May 25, 2011 9:03:15 AM

Work Order ID: 69967

Parent Item: D206-667-207BL

Parent Item Name: Crosstube Mid Aft

Start Date: 5/25/2011 **Required Date:** 6/24/2011

Start Qty: 1.00 **Required Qty:** 1.00

Comments: RevA 11.01.13 New Issue EC verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN5-10A Bolt		Purchased	No				Each	304.0000		10			
				Location		**Loc Qty**	**Loc Code**						
				ST337		304							
					117313	179							
					117795	125							
AN5-32A Bolt		Purchased	No				Each	176.0000		4			
				Location		**Loc Qty**	**Loc Code**						
				ST340		176							
					115589	51							
					117161	50							
					117514	50							
					117688	25							
AN5-34A Bolt		Purchased	No				Each	130.0000		4			
				Location		**Loc Qty**	**Loc Code**						
				ST340		130							
					116704	20							
					117010	20							
					117366	20							
					117794	70							
AN960JD516 Washer	NAS1149D0563J	Purchased	No				Each	0.0000		18			

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Wednesday, May 25, 2011 9:03:15 AM

Work Order ID: 69967

Parent Item: D206-667-207BL

Parent Item Name: Crosstube Mid Aft

Start Date: 5/25/2011 **Required Date:** 6/24/2011

Start Qty: 1.00 **Required Qty:** 1.00

D206-667-247TRN	Manufactured	No	B70475	Each	0.0000	1 11-8-21

Crosstube Assembly, Mid Aft

D2873-043	Manufactured	No		Each	40.0000	2 RT 11-06-30

Nut Plate Assembly

Location	Loc Qty	Loc Code	
LG	36		
68084	16		
68801	20		x 2
LG052	4		
66898	4		

D2873-045	Manufactured	No		Each	35.0000	2 RT 11-06-30

Nut Plate Assembly

Location	Loc Qty	Loc Code	
LG	20		
68800	20		x 2
LG052	15		
65992	5		
67741	10		

D2892-1	Manufactured	No	70735	Each	18.0000	2 RT 11-06-29

Support

Location	Loc Qty	Loc Code	
LG052	18		
42785	14		
62592	2		
65717	2		

Dart Aerospace Ltd

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Wednesday, May 25, 2011 9:03:16 AM

Work Order ID: 69967

Parent Item: D206-667-207BL

Parent Item Name: Crosstube Mid Aft

Start Date: 5/25/2011 **Required Date:** 6/24/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3595-063-450	Manufactured	No	Each	61.5400	4

RUBBER CUSHION

70113

Location	Loc Qty	Loc Code
LG	52	
67353	7	
68893	45	
LG055	9.54	
68157	9.54	

MS20601-AD4W10	Purchased	No	Each	200.0000	14

RIVET

Location	Loc Qty	Loc Code
LG051	200	
116186	3	
116767	14	
117193	83	
117676	100	

MS21042L5	Purchased	No	Each	1,243.000	4

Nut

Location	Loc Qty	Loc Code
ST300	1243	
116105	283	
116548	260	
117441	500	
117591	100	
117611	100	

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Wednesday, May 25, 2011 9:03:16 AM

Work Order ID: 69967

Parent Item: D206-667-207BL

Parent Item Name: Crosstube Mid Aft

Start Date: 5/25/2011 **Required Date:** 6/24/2011

Start Qty: 1.00 **Required Qty:** 1.00

MS21920-22	Purchased	No		Each	95.0000	4

Clamp(per MIL-DTL-8783C)

Location	Loc Qty	Loc Code
LG050	95	
116207	7	
117279	38	
117506	50	

11-06-29

X4

Dart Aerospace Ltd

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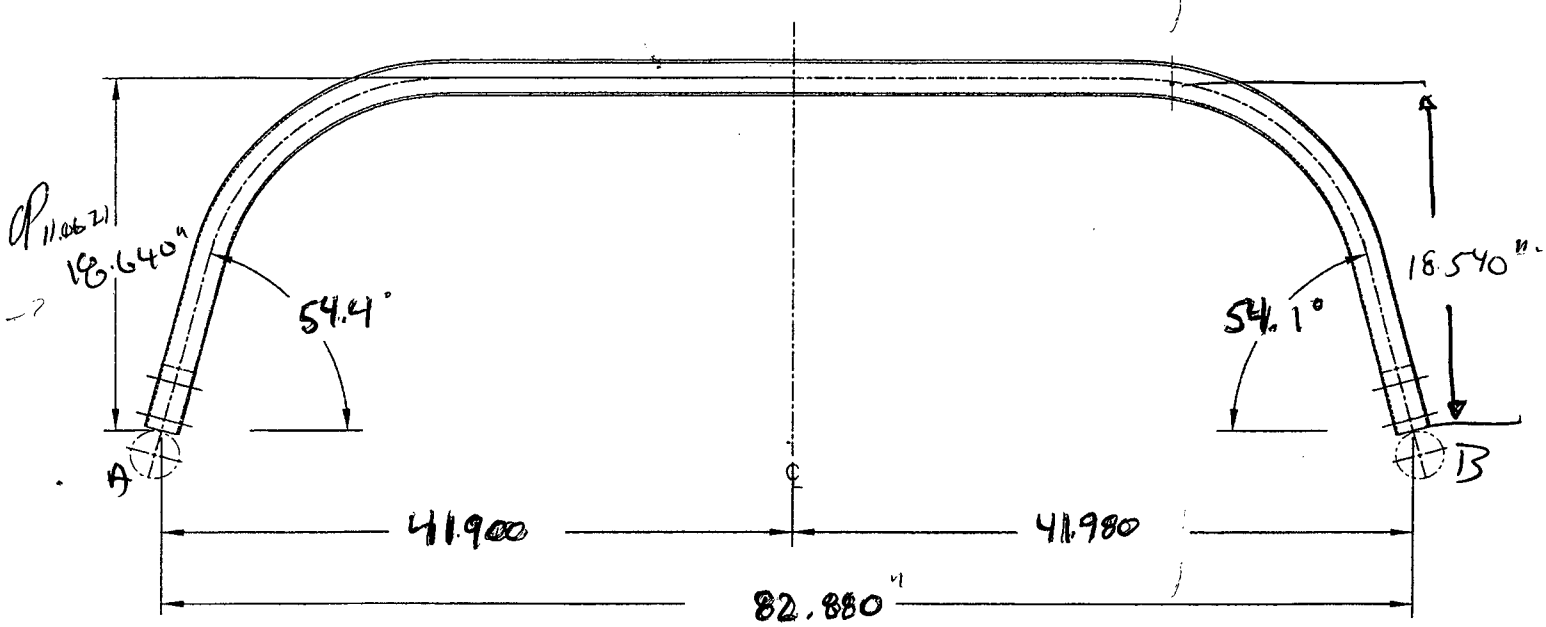
NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	69967
Description: Crosstube	Part Number:	D206-667-207 BC
Inspection Dwg: D206-667-247 **Rev:** A		Page 1 of 1

Required Dimension	Min	Max
Height	~~18.34~~ 18.345"	~~18.60~~ 18.595"
1/2 Span	41.795"	~~42.05~~ 42.045"
Angle	54°	56°
Total Span 83.840	~~85.750"~~ 83.710	~~86.250"~~ 83.970



Comments
Tube bent high. OK 11.06.21

QC15 Inspection	
Date	11/04/21

Rev	Date	Change	Revised by	Approved
		New Issue		

Item	Qty -247	Part Number	Description
1	X	D206-667-247	CROSSTUBE ASSEMBLY (206L MID AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 099967

pl 11-05-25

GENERAL NOTES:

1) MATERIAL: MANUFACTURED FROM D6004-115
   FINISHED LENGTH = 99.76±0.020
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
   PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
   PAINT OUTSIDE PER DART QSI 005 4.2
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
4) UNITS: INCHES UNLESS OTHERWISE NOTED.
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-247" AND BATCH NUMBER ON INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).
7) WEIGHT: 21.1 lbs (-607 = 17.7 lbs)
8) PART IS SYMMETRIC ABOUT CENTERLINE.
9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011 -05- 24

REV.	DESCRIPTION	BY	DATE
A	NEW ISSUE	CP	10.12.23

DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN		
CHECKED		DRAWING NO. REV. A
MFG. APPR.		D206-667-247 SHEET 1 OF 4
APPROVED		TITLE SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID AFT) NTS
DATE	10.12.23	

Dart Aerospace Ltd

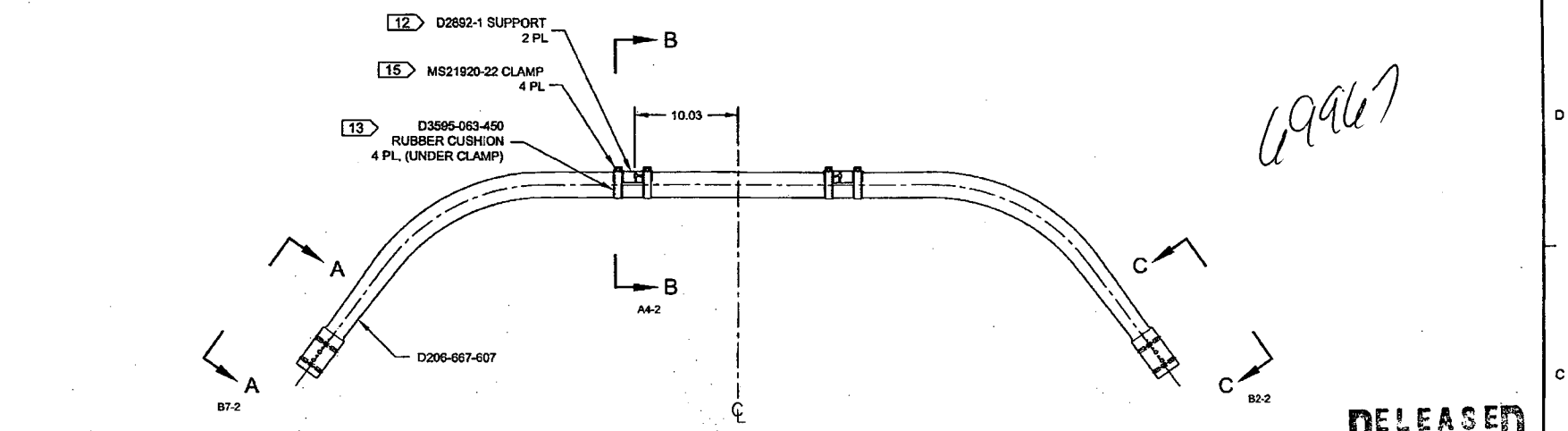
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

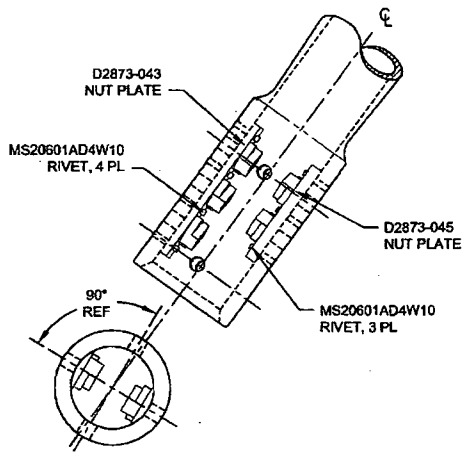
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

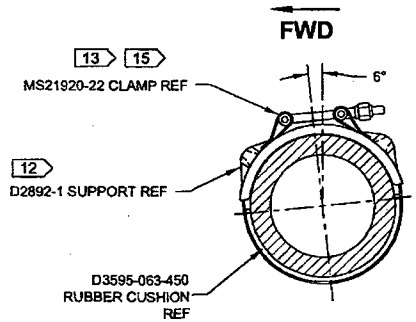
NOTE: Date & initial all entries



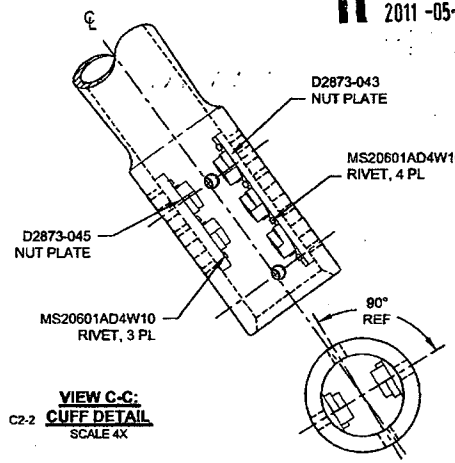
D206-667-247
ASSEMBLY DETAIL
(VIEW LOOKING FWD)



VIEW A-A:
C7-2 **CUFF DETAIL**
SCALE 4X



D5-2 **SECTION B-B**
SCALE 5X



VIEW C-C:
C2-2 **CUFF DETAIL**
SCALE 4X

DESIGN		**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D206-667-247	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID AFT)	NTS
DATE	10.12.23		

Dart Aerospace Ltd

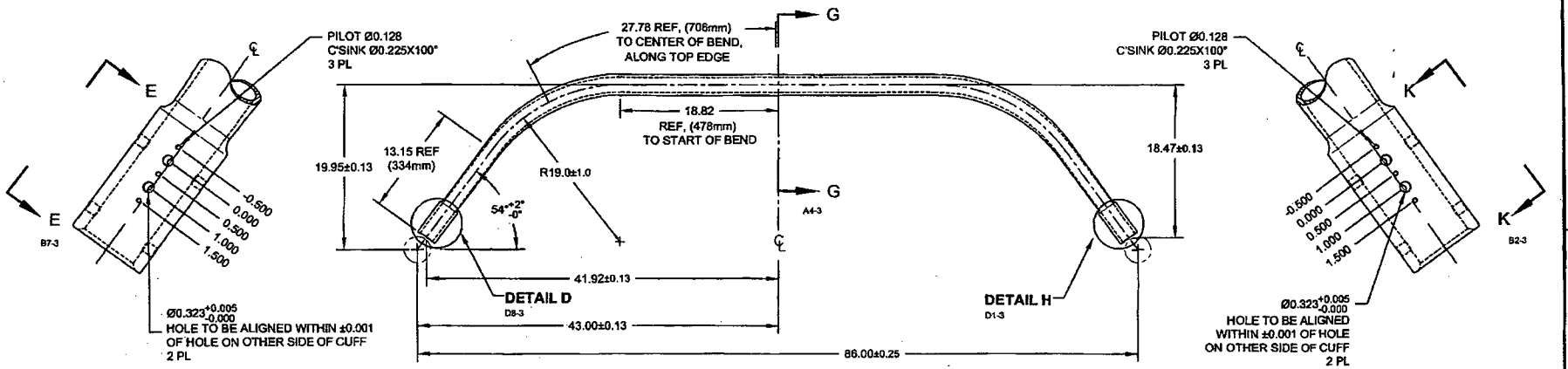
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

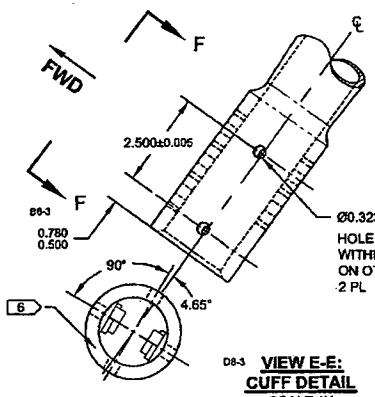
NOTE: Date & initial all entries



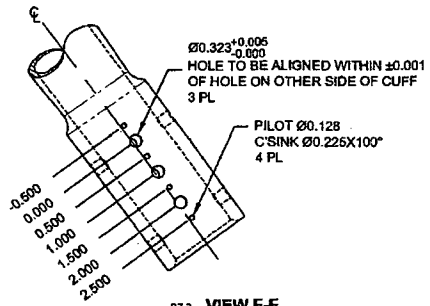
C6-3 **DETAIL D**
SCALE 4X
(VIEW LOOKING FWD)

10 **D206-667-607**
BENDING AND DRILLING DETAIL
(VIEW LOOKING FWD)

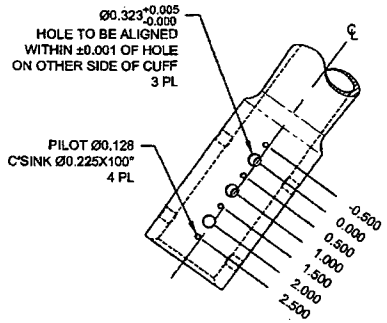
C3-3 **DETAIL H**
SCALE 4X
(VIEW LOOKING FWD)



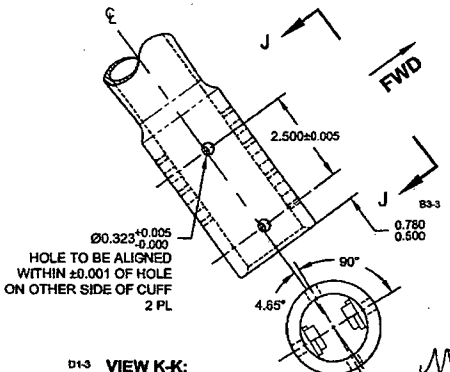
D8-3 **VIEW E-E:**
CUFF DETAIL
SCALE 4X



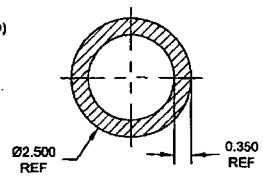
B7-3 **VIEW F-F**
(VIEW LOOKING AFT, ROTATED)



B2-3 **VIEW J-J**
(VIEW LOOKING AFT, ROTATED)



D1-3 **VIEW K-K:**
CUFF DETAIL
SCALE 4X



D4-3 **SECTION G-G**
SCALE 5X

RELEASED
2011-05-24

DESIGN		**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN		
CHECKED		DRAWING NO. REV. A
MFG. APPR.		D206-667-247 SHEET 3 OF 4
APPROVED		TITLE SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID AFT) NTS
DATE 10.12.23		

Dart Aerospace Ltd

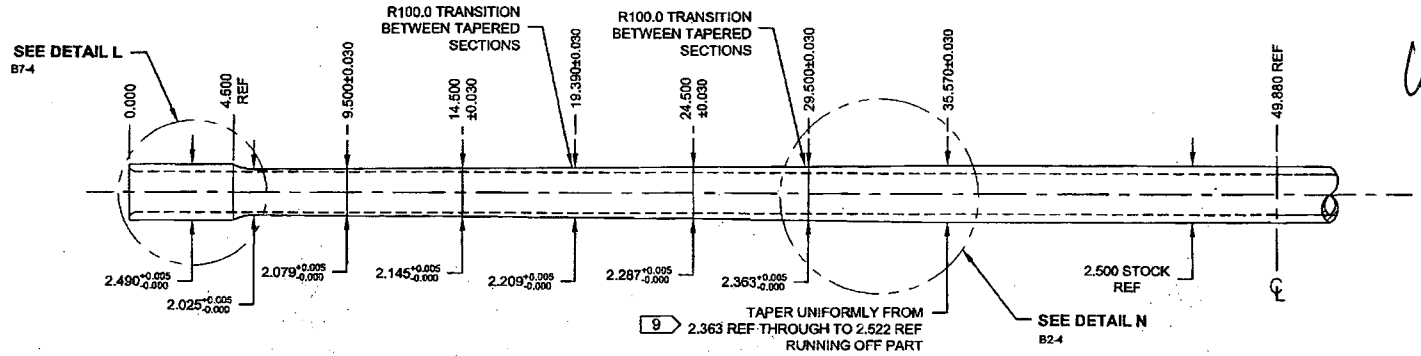
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

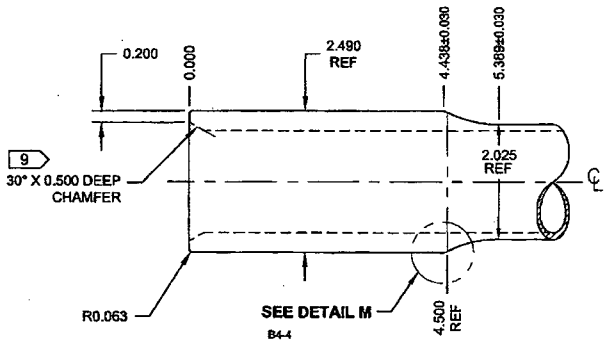
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

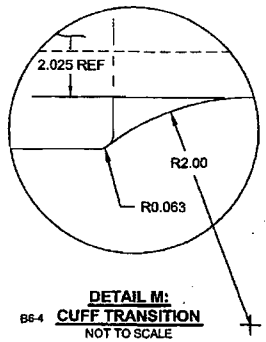
NOTE: Date & initial all entries



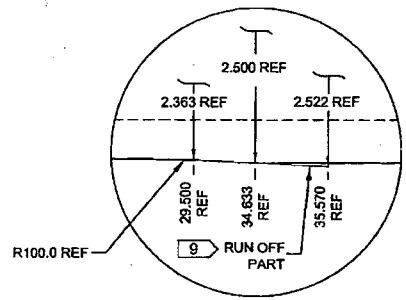
TURNING DETAIL



C7-4 **DETAIL L: CROSSTUBE CUFF**
SCALE 2.5X



B6-4 **DETAIL M: CUFF TRANSITION**
NOT TO SCALE



C4-4 **DETAIL N: TAPER RUN-OFF**
NOT TO SCALE

RELEASED
2011-05-24

DESIGN		**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN		
CHECKED		DRAWING NO. REV. A
MFG. APPR.		D206-667-247 SHEET 4 OF 4
APPROVED		TITLE SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID AFT) NTS
DATE	10.12.23	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Chris Provencal

From: David Shepherd <dshepherd@dartaero.com>
Sent: Wednesday, June 15, 2011 3:05 PM
To: 'Chris Provencal'
Cc: 'Mike Petsche'; 'Dan Stow'; 'Eric Downing'; 'Linda Lacelle'
Subject: RE: Procedure for installing supports.

Hi Chris,

I agree with your procedure outlined below. It is our preference to leave the paint on the crosstube if we can for added corrosion protection (and for ease of manufacture). If Dan's final testing shows there is a big difference between a painted/unpainted crosstube, then we will switch to alodine only on the crosstube.

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Wednesday, June 15, 2011 11:24 AM
To: 'David Shepherd'
Cc: 'Mike Petsche'; 'Dan Stow'; 'Eric Downing'
Subject: RE: Procedure for installing supports.

David,

Can I confirm that this is the agreed procedure for all newly manufactured tubes with off-center supports:

- Scuff paint under support, clean with MEK
- Completely remove any finish on support (if present), scuff bottom surface of support, clean with MEK
- Apply a 0.04" – 0.07" layer of Proseal 890 class B-2 on bottom of support and install wet.
- Install clamps and torque per dwg
- Clean up excess proseal
- Let cure for 72 hours after installation, recheck torque.

Chris

From: David Shepherd [mailto:dshepherd@dartaero.com]
Sent: Tuesday, June 14, 2011 10:59 AM
To: 'Chris Provencal'
Cc: 'Mike Petsche'; 'Dan Stow'; 'Eric Downing'
Subject: RE: Procedure for installing supports.

Made a couple of small changes.

- Remove finish on xtube in area of support down to alodine finish.
- Touch up alodine on xtube in affected area
- Completely remove any finish on support, scuff bottom surface of support
- Apply a 0.04" – 0.07" layer of Proseal 890 class B-2 on bottom of support and install wet.
- Install clamps and torque per dwg
- Clean up excess proseal
- Touch up paint finish as req'd per QSI 005
- Let cure for 72 hours after installation, recheck torque.

ACUREN

LIQUID PENETRANT TEST REPORT

P- 05619

PAGE 1 OF 1

CLIENT: DART AEROSPACE
ATTENTION: LINDA CHANTALE / JASON MATT
ADDRESS: 1270 ABERDEEN ST - HAWKESBURY, ON
PROJECT: WET FLUORESCENT LIQUID PENETRANT ON 6 "CROSSTUBES" & 8 "SLEEVES"
ITEM(S) EXAMINED: SEE BELOW

DATE: JUNE 27/2011 TIME AM ☑ PM ☐
ACUREN JOB NO. 138-11-02148
PO/WO NO. 14376
WORK LOCATION AS ADDRESS
ACCEPTANCE STD. ASTM E1417/CSA 0332 REV./DATE 2005

JOB DESCRIPTION | PROCEDURE NO. LT-005 REV./DATE 2008 | TECHNIQUE NO. LT-002 REV./DATE 2008
PART NO.: | MATERIAL ANODIZE ALUMINUM | THICKNESS N/A
SCOPE: PERFORM A WET FLUORESCENT L.P. INSPECTION ON 100% OF THE EXTERNAL SURFACE ON ITEMS MENTIONED BELOW

TEST DETAILS

METHOD	☑ FLUORESCENT	☑ VISIBLE	☑ WATER WASH	☐ SOLVENT REMOVABLE	☐ POST EMULSIFIED
FAMILY BRAND	MAGNAFLUX		BLACK LIGHT S/N 13798	☐ OUTPUT > 1000 µW/CM²	☑ AMBIENT < 2 fc
PENETRANT	ZL-67	MINIMUM DWELL TIME 10 MIN.	LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT		☐ OUTPUT>100 fc @ SURFACE
PENETRANT REMOVER	H_2O	MINIMUM DRY TIME >10 MIN.	OTHER		
DEVELOPER	SKD-S2	MINIMUM DWELL TIME 10 MIN.	LIGHT METER S/N	CAL DUE DATE	AUG/2011
DEVELOPER TYPE	☑ NON AQUEOUS	☐ AQUEOUS ☐ DRY			

TEST SURFACE

SURFACE CONDITION	☐ AS GROUND	☐ AS WELDED	☐ MACHINED	☐ SHOT BLASTED	☑ CLEAN BARE METAL
SURFACE TEMPERATURE	☐ < - 4°C/ 20°F	☐ - 4°C/ 20°F TO 10°C/50°F		☑ 10°C/50°F TO 52°C/125°F	☐ > 52°C/125°F

RESULTS- (☐ METRIC ☐ IMPERIAL)

1	SLEEVES (8)	W.O. ID 69034	✓	ITEM ID D3689-1
2	CROSSTUBE	W.O. ID 69966	✓	ITEM ID D206-667-207BL AFT
3	"	W.O. ID 69967	✓	ITEM ID D206-667-207BL AFT
4	"	W.O. ID 69968	✓	ITEM ID D206-667-107BL F-WD
5	"	W.O. ID 69969	✓	ITEM ID D206-667-107BL F WD
6	"	W.O. ID 70196	✓	ITEM ID D212-664-101 F WD
7	"	W.O. ID 70197	✓	ITEM ID D212-664-101 F WD

NO RELEVANT INDICATION WAS DETECTED AS PER APPLICABLES STANDARDS

AT 11-06-27

SIGNATURES

CLIENT REPRESENTATIVE: Matthew Murdoch (PRINT) | (SIGNATURE) | DTR # E446638
TECHNICIAN (SIGNATURE): | | REPORT REVIEWED BY:
NAME (PRINT): JAMES DESROSIERS (1ST TECHNICIAN) | (2ND TECHNICIAN) | NAME | INITIALS
CGSB LEVEL 2 SNT LEVEL 2 | CGSB LEVEL SNT LEVEL
CGSB REG. NO 3049 | CGSB REG. NO

WHITE – CLIENT COPY CANARY – OFFICE COPY PINK – TECHNICIAN COPY GOLD – OFFICE COPY